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13TH FLOOR, HONG KONG CLUB BUILDING
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EX PARTE OR LATE FILED

JEFFREY H. OLSON
COMMUNICATIONS COUNSEL
(202) 223-7326

May 8, 1998

Via Hand Delivery

Magalie Roman-Salas, Secretary
Federal Communications Commission
1919 M Street, N.W.
Room 222
Washington, D.C. 20554

Re: Ex Parte Notice, File Nos. 48-SAT-P/LA-97, 89-SAT-AMEND-97, and RM No. 9147

Dear Ms. Salas:

On May 7, 1998, Denis Rouffet, Hélène Fauve, Guy Christiansen, and Christine Vadier of SkyBridge; Jeffrey H. Olson and Diane C. Gaylor of Paul, Weiss, Rifkind, Wharton & Garrison; George Kizer of Alcatel Network Systems; and Jeffrey Krauss, a consultant to SkyBridge, met with the individuals on the attached list for the purpose of discussing issues raised in the above-captioned proceedings. The discussion focused on the ability of SkyBridge to share spectrum on a noninterference basis with geostationary satellite systems and terrestrial microwave systems. The attached handouts were distributed at the meeting.

In accordance with Section 1.1206(b)(2) of the Commission's Rules, 47 C.F.R. § 1.1206(b)(2) (1997), we are submitting an original and three copies of this notice.

Please contact the undersigned if you have any questions.

Respectfully submitted,

Jeffrey H. Olson

Attachments

cc: See attached list.

Sasha Field
International Bureau

Julie Garcia
International Bureau

Kimberly M. Baum
International Bureau

Julius P. Knapp
Office of Engineering and Technology

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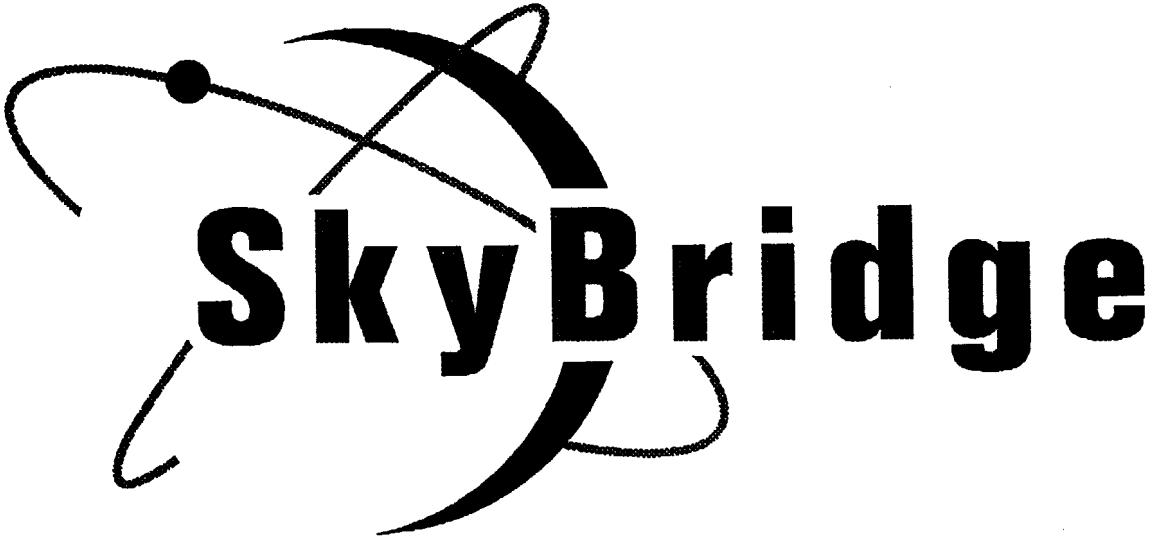
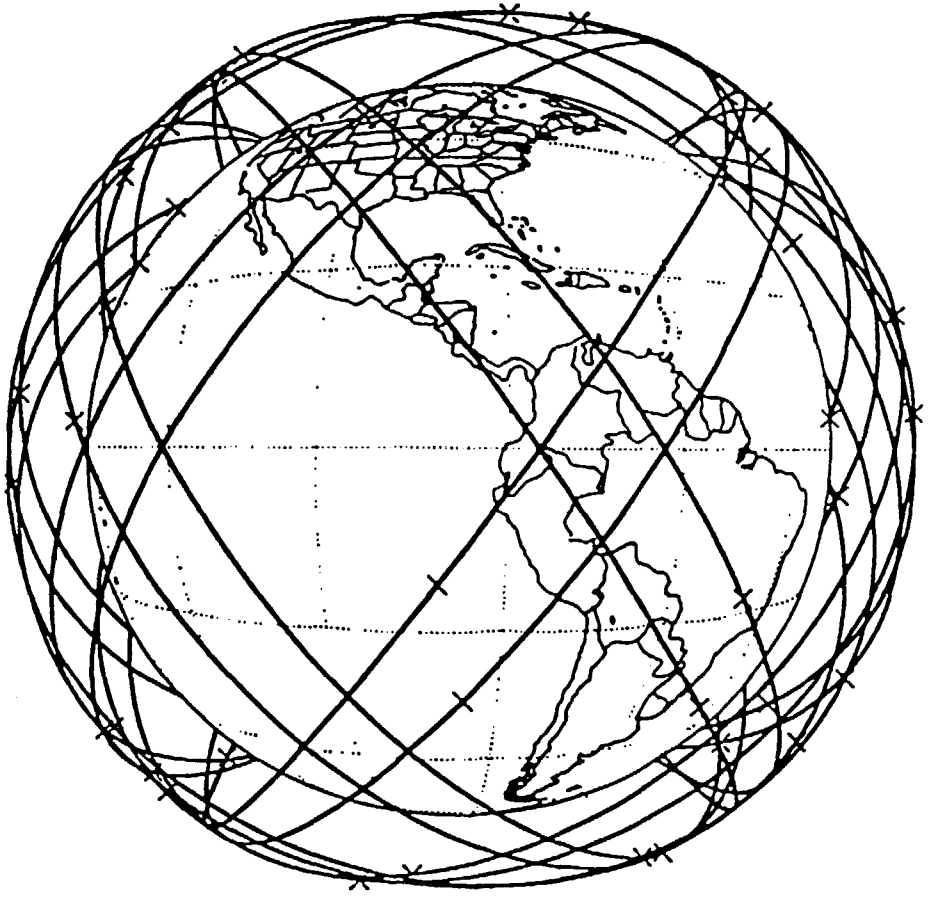


Presentation for OET
May 7, 1998

The SkyBridge System

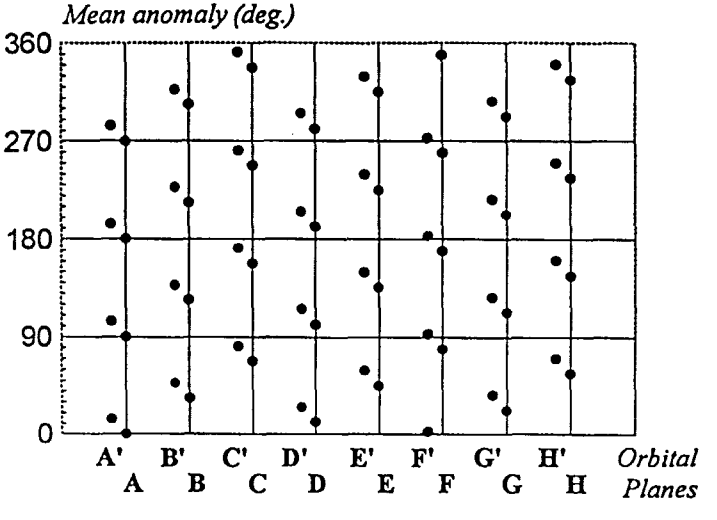
- 64 Satellites
- 2 Identical 32-Satellite Sub-Constellations
- Low Earth Orbit
- Ku-Band Operation
- FSS Broadband Interactive Services
- Protects Existing GEO and Terrestrial Systems

SkyBridge Constellation

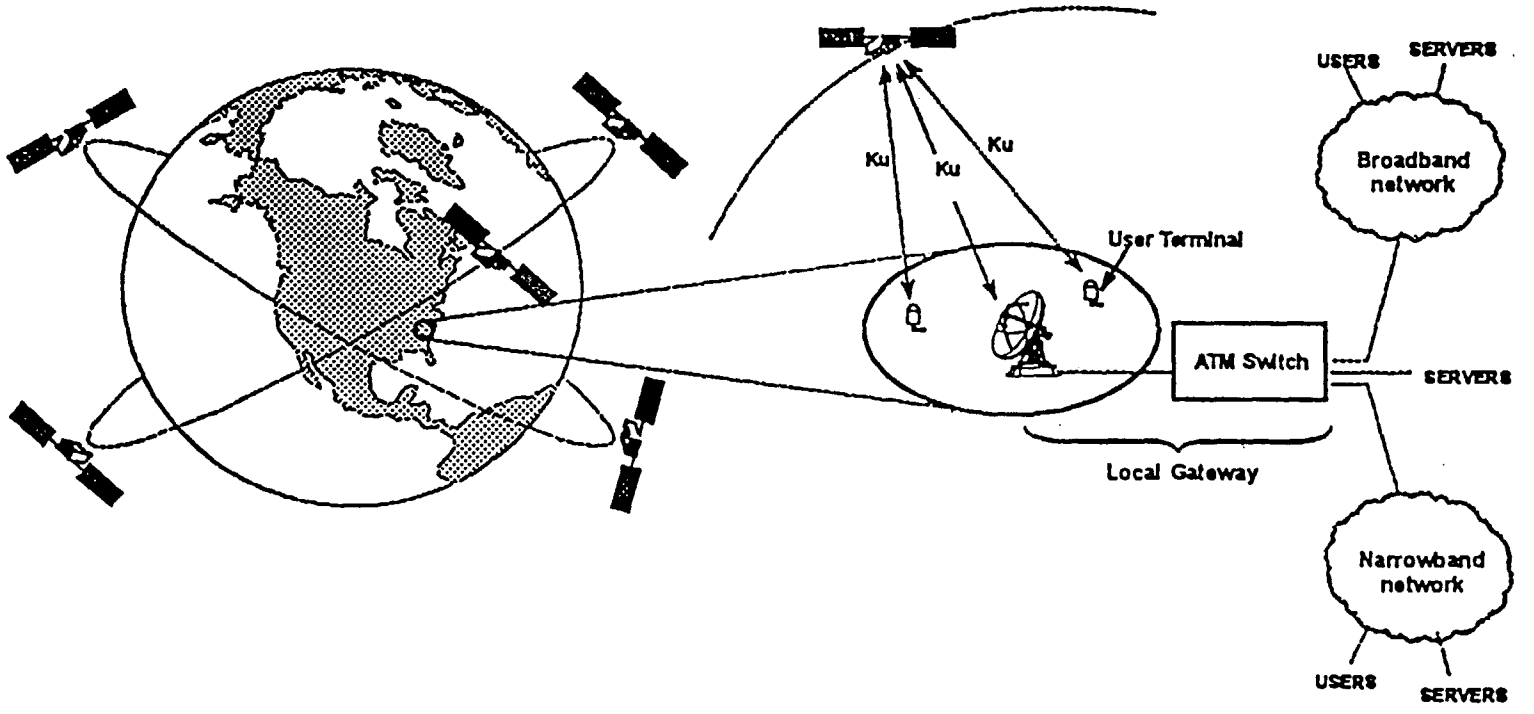


32 Satellite Sub-constellation	
Number of planes	8
Satellites per plane	4
Inclination	55°
Altitude	1457 km
Orbit period	115 min.

Relative Phasing between 2 Sub-constellations	
Ascending node spacing	-10°
Mean anomaly spacing	+14°



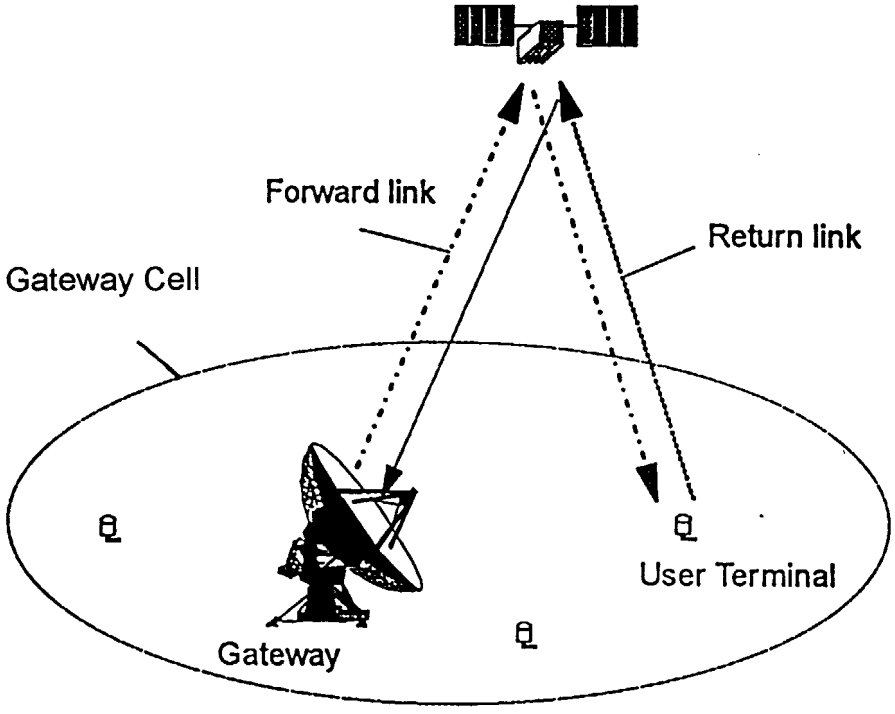
SkyBridge System Overview



Space Segment

Ground Segment

SkyBridge Communications Links

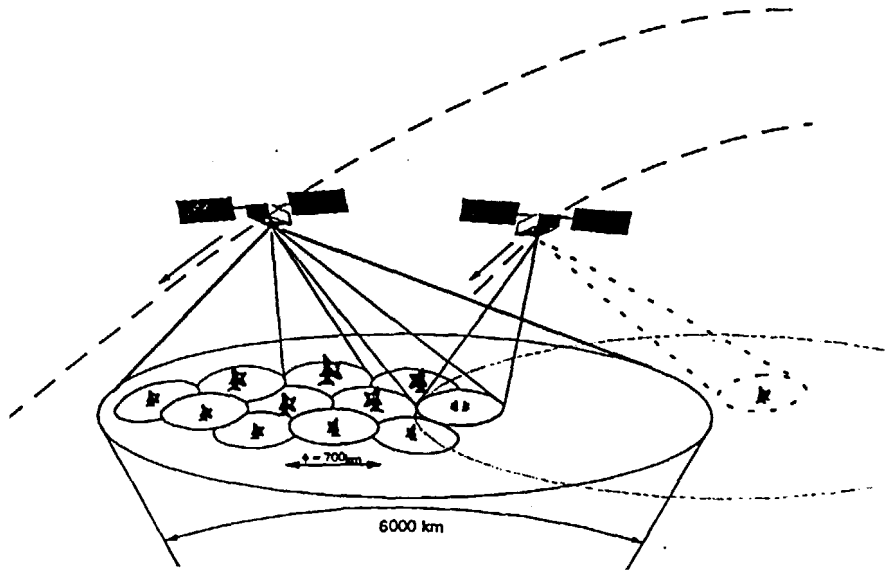


- One Gateway is located in each Gateway Cell.
- Each Gateway serves the User Terminals within its Gateway Cell.

♦ SkyBridge does not employ Inter-Satellite Links.

SkyBridge Spot-Beams

Spot-Beam Size:	350 km radius
Maximum No. of Beams per Satellite:	45[1/]
Satellite Coverage:	3000 km radius



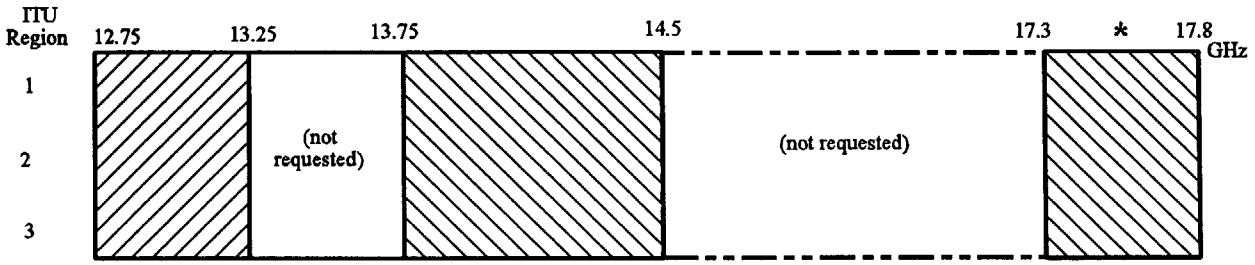
Spot-Beam Operation

- Spot-beam coverage area on ground remains fixed as the Satellite moves.
- Each beam covers one Gateway Cell, carrying the traffic of the User Terminals within the Gateway Cell.
- As the Satellite moves out of visibility, Gateway traffic is handed-off to another Satellite.

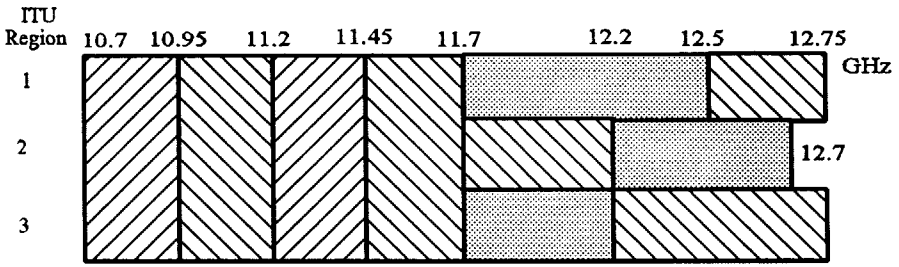
1/ Most of the time, no more than 6 beams will operate at any given frequency and polarization.

SkyBridge Band Plan

Uplinks



Downlinks



Planned FSS (Appendix 30B)

Unplanned FSS (Articles 11 and 13)

Planned BSS (Appendices 30 and 30A)

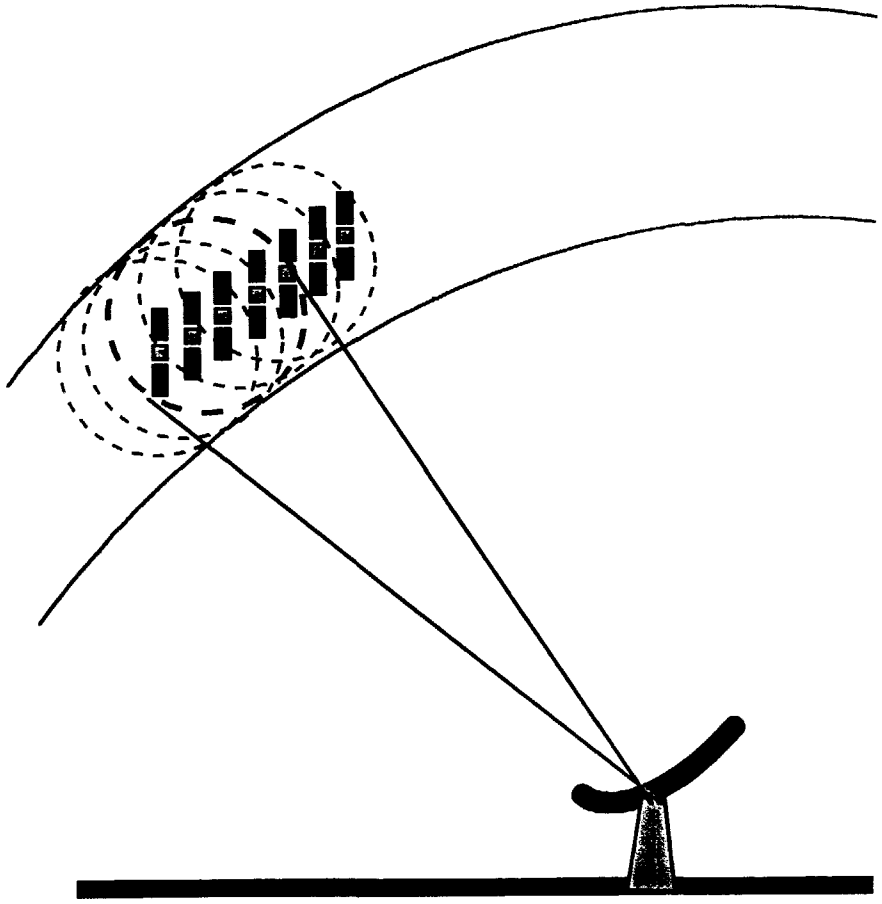
* Feeder Links for BSS per Appendix 30A

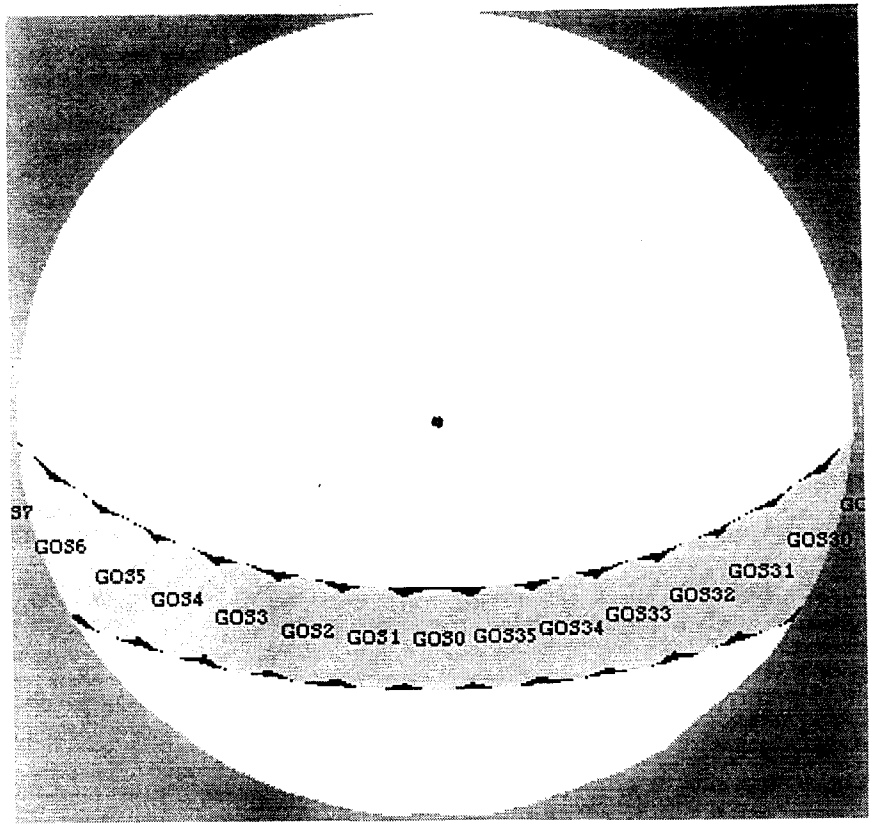
SkyBridge Requirement: 1.05 GHz for uplink and downlink

Protecting GEO Systems

- Concept -

- Due to the directivity of GEO systems, most of the sky is unused.





GEO Arc as Seen from a Point on Earth

Protection Criteria

GEO Systems are protected if:

- No degradation in quality of service or availability of GEO systems
- No operational constraints for the GEO operator

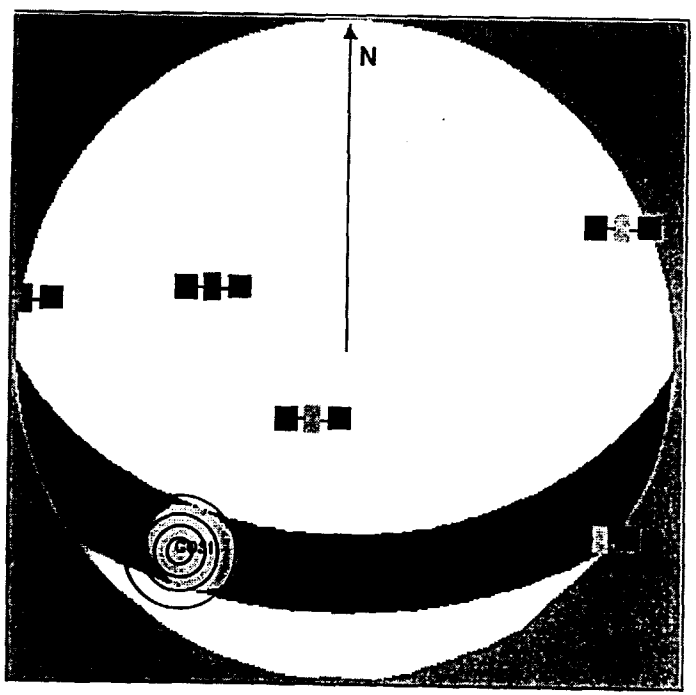
Standard LEO Constellation

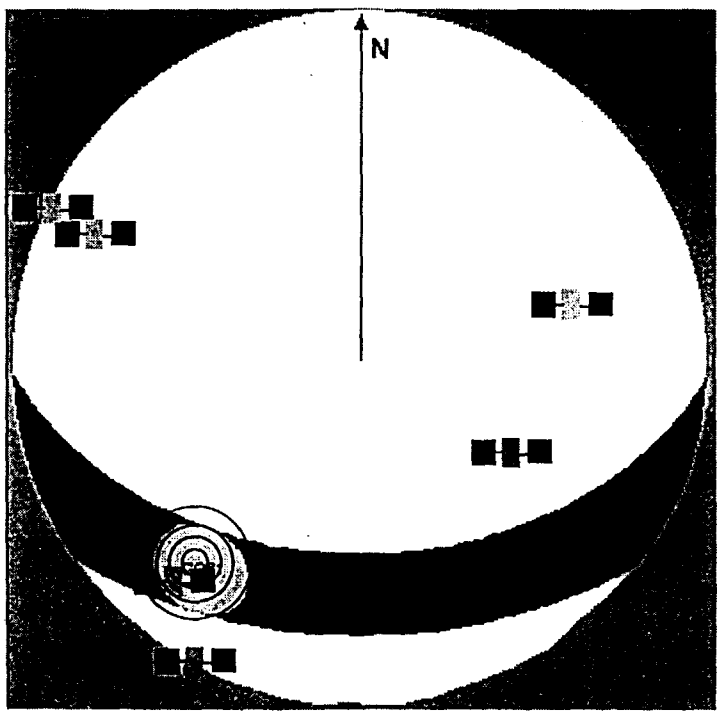
Long Term Situation

- Situation most of the time
- Satellites far apart
- Similar to standard GEO coordination

Short Term Situation

- Infrequent and short events
- LEO satellite in alignment with GEO satellite
- Problem for both systems if interference-avoidance techniques not employed





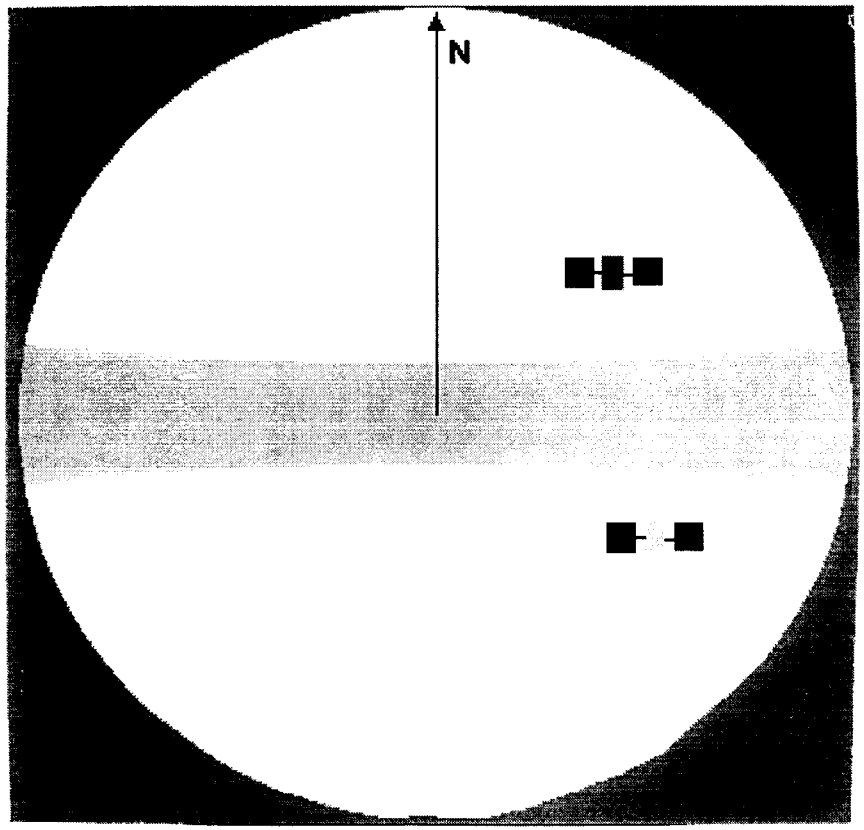
Interference-Avoidance Techniques Employed by SkyBridge to Protect GEO Systems

- Shut down of spot beams to avoid SkyBridge main lobe transmissions into main lobe of GEO antennas
- Choice of specific constellation to ensure continuous service
- Choice of specific waveform, including spreading, to limit PFD

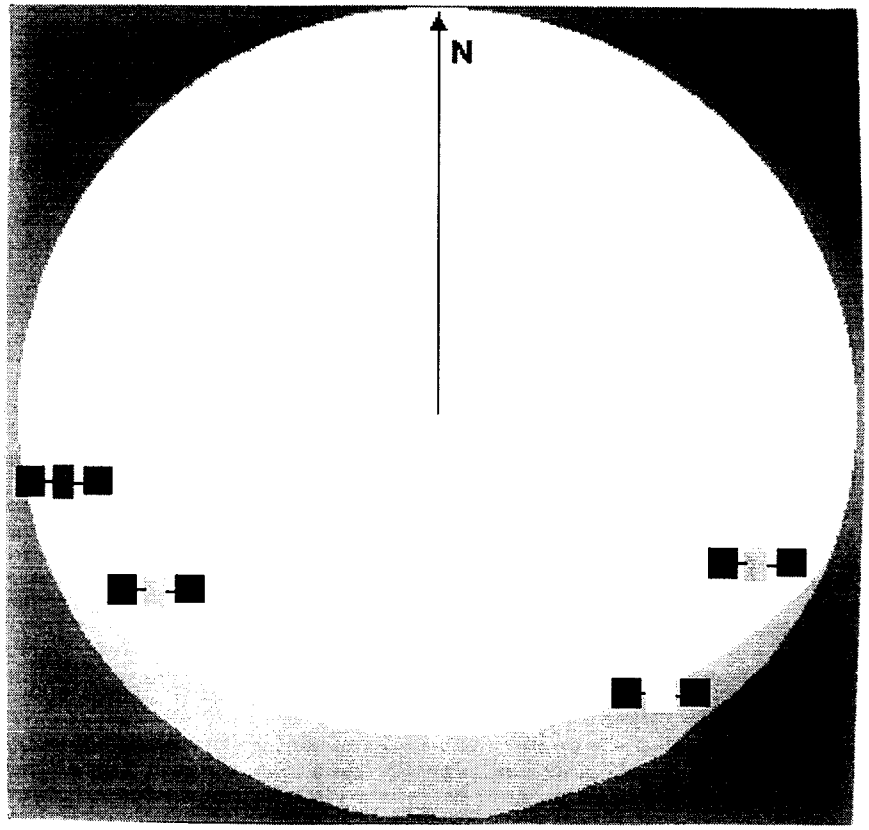
Implementation of Spot-beam Shut Down

- When a spot beam is shut down, its traffic is handed to another Satellite.
- The SkyBridge constellation is designed so that there is always a usable Satellite to which traffic can be handed at least 10° away from the GEO arc as seen by any earth station.

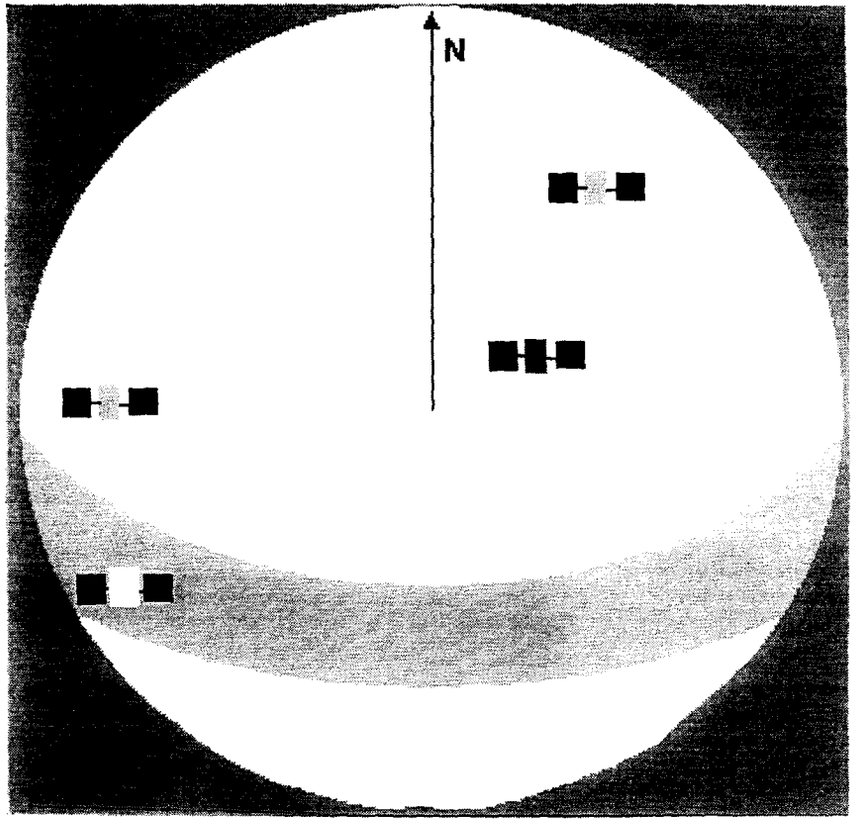
Fish-Eye Views of the Sky as Seen by a SkyBridge Earth Station

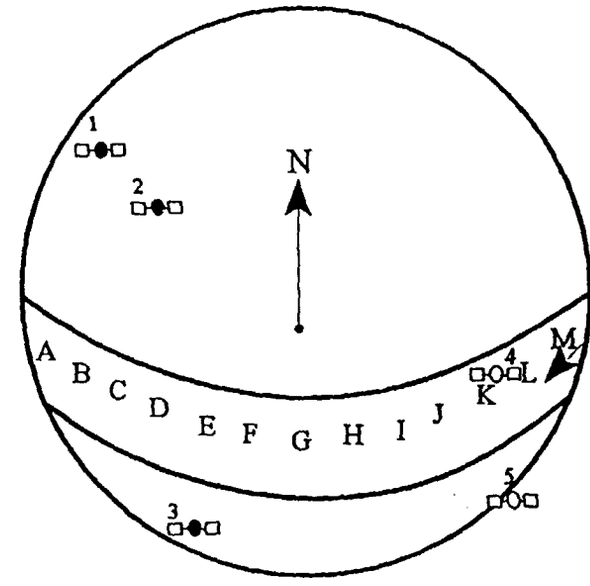


From Quito, Ecuador
latitude = 0°



From Fairbanks, Alaska
latitude = 65°





KEY TO GEOSTATIONARY ORBIT SATELLITES (GSO)
VISIBLE FROM WASHINGTON, DC

	Longitude		
Marker	East	West	Ku-band Satellite Examples
A	340	20	Intelsat
B	330	30	Intelsat, Orion
C	320	40	Intelsat, PAS
D	310	50	Intelsat
E	300	60	South America, AMSC Feeder
F	290	70	SN2
G	280	80	GE2, SN3
H	270	90	Telstar 402, Gal 7, Gal 3/8
I	260	100	Gal 4, GE-1, Gstar IV, SN4
J	250	110	Aniks & Solidaridads
K	240	120	Morelos-2, SBS-5
L	230	130	GE-3
M	220	140	AMSC Feeder

From Washington, D.C.
latitude = 39°

Protecting Fixed Service Systems

- Concept -

Protection Criteria

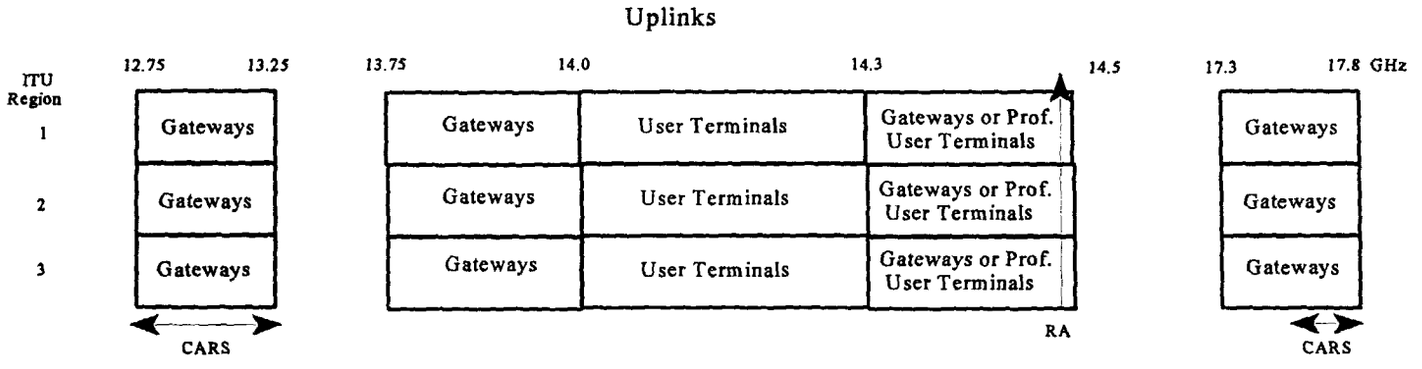
Fixed Service systems are protected if:

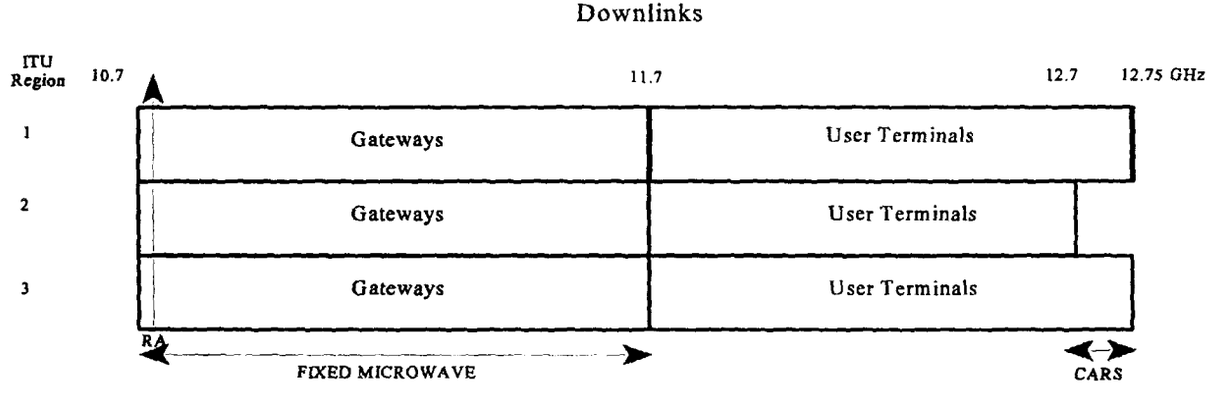
- No degradation in quality of service or availability of Fixed Service links
- No significant constraints on future Fixed Service expansion

Techniques Employed by SkyBridge to Protect Fixed Service Systems

- Operate only Gateways in frequencies heavily used by Fixed Service systems
- Limited number of Gateways (30-40 in US)
- Use state-of-the-art antenna technology
- Use standard coordination techniques to site Gateways
- Employ specific waveform, including spreading, to limit PFD to well below requirements of 47 C.F.R. § 25.208(b)

Possible Frequency Usage





Example SkyBridge Analyses on Ability to Protect Fixed Service Systems

- Application, Appendix B - Results of Computer Simulations
- Amendment, Appendix C - Separation Distance Calculations
- Petition for Rulemaking - Proposed Rules Protecting FS Systems
- Response to TIA Comments on Application

SkyBridge

FREQUENCY RE-USE

With the Fixed Service

ALCATEL

SkyBridge

Table of Contents

- SkyBridge proposed frequency plan
- Frequency re-use with FS systems on the terrestrial path
- Frequency re-use with FS systems on the downlink (slant path)